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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,821

11/10/2003

Dario B. Crosetto

510974-600005

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01/06/2006

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EXAMINER

GAGLIARDI, ALBERT J

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,821

Applicant(s)

CROSETTO, DARIO B.

Examiner

Albert J. Gagliardi

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Information Disclosure Statement***

1. Where the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action. See Guidelines for Reexamination of Cases in View of *In re Portola Packaging, Inc.*, 110 F.3d 786, 42 USPQ2d 1295 (Fed. Cir. 1997), 64 FR at 15347, 1223 Off. Gaz. Pat. Office at 125 (response to comment 6). Consideration by the examiner of the information submitted in an IDS means that the examiner will consider the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search. The initials of the examiner placed adjacent to the citations on the PTO-1449 or PTO/SB/08A and 08B or its equivalent mean that the information has been considered by the examiner to the extent noted above. MPEP § 609 (Eighth Edition, August 2001).

The examiner notes that due to the unusually large number of references cited, and the absence of any description of the relevance of the references, it should be assumed that only the most cursory review of the cited documents consistent with these guidelines has been performed. If applicant is aware of any information that might be of particular relevance, it should be pointed out in order to insure a higher degree of consideration.

Specification

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2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. In addition, the examiner notes that the current status of the numerous related cases should be reviewed and updated as appropriate.

Claim Objections

4. Claims 1 and 3 objected to because of the following informalities:

Regarding claim 1, the second paraphrase relating to “a plurality of channels” is a duplicate of the first and should be deleted.

Regarding claim 3, the first occurrence of the phrase “the second plurality of transducers” appears to be a typographical error and should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young *et al.* (US 6,297,506 B1) in view of Crosetto (US 5,937,202).

Regarding claim 1, *Crosetto* discloses (Fig. 25) a device for efficiently detecting subatomic particles including: a detector assembly comprising at least a plurality of transducers (col. 89, lines 1-5); a plurality of processors, said plurality of processors being arranged in a plurality of substantially parallel layers, and each of said processors

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being capable of communicating with processors to each lateral side in one substantially parallel layer, receiving communication from a processor in a second substantially parallel layer and transmitting to a third processor in a third substantially parallel layer (see generally fig. 5); a plurality of channels, each of the plurality of channels being coupled to one of the plurality of transducers and at least three of the plurality of processors, the three of the plurality of processors being in the first, second and third substantially parallel layers (see generally Fig. 25; col. 89, lines 22-31; col. 90, lines 9-31); and a pyramidal funneling structure, said pyramidal funneling structure comprising a plurality of funnel input processors, each of the plurality of funnel input processors being coupled to a channel and having two of the plurality of funnel input processors coupled to an interior funnel processor (see generally Fig. 25; col. 90 lines 29-34).

Regarding the detector assembly also including at least one detector crystal optically coupled to at least some of the transducers, the examiner notes that while *Crosetto* does not provide details of the detector assembly, those skilled in the art appreciate that the use of a detector crystal optically coupled to at least one of the plurality of transducers is well known and considered routine in the art. Regarding the specific details of the detector crystal, *Young* discloses (Fig. 1) an efficient detector assembly for detecting subatomic particles including: a plurality of transducers (24) and at least one detector crystal (22") coupled to at least some of said plurality of transducers (24), the detector crystals having a plurality of slits, each being approximately equivalent in length (see generally Fig. 3) and oriented parallel to the optical axis of said at least some of said transducers. *Young* teaches that such detector assemblies have reasonable cost and are commercially and technologically practical, and therefore, it would have

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been obvious to modify the system suggested by *Crosetto* so as to utilize well-known detector assembly technology in view of the commercial and technological practicality thereof.

7. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Crosetto* and *Young* as applied above, and further in view of Yamashita (US 4,823,016).

Regarding claim 2, although *Crosetto* and *Young* do not disclose that the detector assembly further comprises a second plurality of transducers, *Yamashita* discloses (Figs. 1, 4) a detector assembly including first and second pluralities of transducers (11) optically coupled to the least one detector crystal (12), the second plurality of transducers being coaxial with at least some of the plurality of transducers. *Yamashita* teaches that the use of two pluralities of transducers allows for higher spatial resolution (col. 2, lines 8-16). Therefore it would have been obvious to modify the system suggested by *Crosetto* and *Young* so as to allow for a detector assembly with even greater spatial resolution.

Regarding claim 3, the use of light guides is well known and would have been an obvious design choice depending on the needs of the application.

Regarding claim 4, the device as suggested according to claim 2 inherently includes a processor that performs a depth of interaction calculation.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-

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2436. The examiner can normally be reached on Monday thru Friday from 10 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi
Primary Examiner
Art Unit 2884

AJG